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MODE OF OCCURRENCE OF INTRUSIVE CHARNOCKITE IN THE SKARVSNES AREA, LÜTZOW-HOLM BAY, EAST ANTARCTICA (ABSTRACT)

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In the Skarvsnes area, Lützow-Holm Bay, it is sometimes found that charnockite intrudes into metabasite as discordant veins or subconcordant layers. One example observed on Lake Funazoko is described here.

A charnockitic body intrudes into metabasites which have been separated into boudinaged blocks around 5 m in diameter. The main constituent minerals of the charnockite are antiperthitic plagioclase (X_{An} (Ca/(Ca+Na+K))=0.34)+orthopyroxene+hornblende+biotite (X_{Mg}(Mg/(Fe+Mg))=0.47)+clinopyroxene+quartz. Metabasites are characterized by the assemblage of plagioclase+hornblende+biotite+orthopyroxene+clinopyroxene. In the boundary zone around 50 cm thick between the charnockitic body and metabasites, anorthositic layers several centimeters thick intrude into metabasites parallel to the boundary. In the zone, metabasites have been changed to lack biotite but to have K-feldspar porphyroblasts 5-10 cm in long diameter surrounded by thin anorthositic mantle. The porphyroblasts usually show preferred orientation, the long axes being parallel to the contact plane between charnockite and metabasites. These anorthositic layers and mantles are composed mainly of plagioclase (X_{An}=0.47-0.57), with lesser amounts of garnet (X_{pyr}(Mg/(Fe+Mn+Mg+Ca))=0.18) and biotite (X_{Mg}=0.26).

Anorthosite and K-feldspar porphyroblasts, as they are found only in the boundary zone between charnockite and metabasites, could be formed by the reaction of intrusive charnockite with metabasites.

Y. MOTOYOSHI *et al.* (Proc. NIPR Symp. Antarct. Geosci., 7, 101, 1994) stated that the highest grade metamorphic rocks in the Lützow-Holm Bay region occur in the Rundvågshetta area and that the maximum *P-T* conditions of metamorphism are 1000°C and 1.0 GPa. The Skarvsnes area is situated 50 km away from the thermal axis. Whether the progressive increase of metamorphic grade toward the axis is continuous or not is still unsolved, but the intrusive charnockite in the Skarvsnes area will give a clue to the solid flow in the lower crust.

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